

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendments and the following discussion, is respectfully requested.

Claims 1-16 and 27-39 are pending. Claims 1-13 and 16 are amended. Claims 17-26 are canceled. Claims 28-39 are newly added. Support for the amendments to Claim 1 may be found in at least Fig. 4C. Support for the amendments to the specification and Claims 2-13 and 16 is self-evident. Support for newly added Claims 28, 34, and 35 can be found in original Claim 6, for example. Support for newly added Claim 29 may be found at least in paragraph [0076] of the specification, as published. Support for newly added Claim 30 may be found at least in Fig. 1 and the corresponding description. Support for newly added Claim 31 may be found at least in Claim 1 and in paragraph [0037] of the specification, as published. Support for newly added Claims 32-39 may be found at least in Claims 4-8 and 11-12, respectively. Thus, no new matter is added.

In the outstanding Office Action, Claims 8-10 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite, Claims 1, 2, 4, 5, 8, 9, 11-13, and 16 are rejected under 35 U.S.C. § 102(b) as anticipated by Mansell et al. (U.S. Patent No. 6,108,121, hereinafter "Mansell"), Claims 3, 6, 7, 14, 15, and 27 are rejected under 35 U.S.C. § 103(a) as unpatentable over Mansell, and Claim 10 is rejected under 35 U.S.C. § 103(a) as unpatentable over Mansell in view of Costello et al. (U.S. Patent No. 5,357,825, hereinafter "Costello").

At the outset, Applicants note with appreciation the courtesy of a personal interview granted by Primary Examiner Anita Alanko to Applicants' representative. In accordance with MPEP § 713.04, and in combination with the Interview Summary provided by Primary Examiner Alanko, the substance of the personal interview is substantially summarized below.

Regarding the corrections to the specification suggested by Examiner Alanko during the interview, Applicants amended the Brief Description of the Figures section to further

describe the figures and amended “AsGa” to read “GaAs” in paragraph [0083] of the specification, as published. Applicants note that the term MUMPS, as described in paragraph [0006] of the specification, as published, is the correct terminology as it is commonly known in the art as Multi-User MEMS Processes.¹

Regarding the rejection of Claims 8-10 under 35 U.S.C. §112, second paragraph, it is noted that Claims 8-10 are amended to delete the word “type.” It is also noted that Claims 1 and 16 are amended to clarify the “means” language used in those claims.

Regarding the rejection of Claims 1, 2, 4, 5, 8, 9, 11-13, and 16 as anticipated by Mansell, Applicants respectfully traverse with the following response.

Amended independent Claim 1 recites:

A method for manufacturing an actuation system for an optical component **from a substrate**, the method comprising:
etching a first face of said substrate to form pads,
etching a second face of said substrate to **expose a same material as that comprising the pads**, thereby exposing a flexible or deformable membrane made of the same material as the pads, and
producing an actuator to actuate the pads and membrane.

Accordingly, as discussed in the personal interview, etching a second face of said substrate to expose a same material as that comprising the pads exposes a flexible or deformable membrane made of the same material as the pads.

Turning to the references, as further discussed during the personal interview, Mansell fails to disclose etching a second face of said substrate to expose a **same material as that comprising the pads**. Instead, Mansell describes² covering the top of a substrate with a reflective coating (48), tapering the edges of the reflective coating for protection against anisotropic etching, and then masking the reflective coating with a masking layer (52).

¹ See MUMPs at <http://adsabs.harvard.edu/abs/1995SPIE.2639...54M>.

² Mansell at col. 5, line 14 to col. 6, line 22.

Pillars (36) are then formed on the bottom of the substrate, after which reflective coating masking layer (52) is removed to reveal reflective coating (48). Removing masking layer (52) is **not the same** as etching a second face of said substrate to expose a same material as that comprising the pads. The underlying substrate in Mansell in which pillars (36) are formed is **not exposed** by removing masking layer (52). Moreover, reflective coating (48) in Mansell is **not the same material** as the underlying substrate in which pillars (36) are formed.

Thus, since Mansell fails to disclose etching a second face of said substrate to expose a same material as that comprising the pads, thereby exposing a flexible or deformable membrane made of the same material as the pads, Mansell does not set forth each and every element of Claim 1. Furthermore, Costello fails to remedy the deficiencies of Mansell. Accordingly, Applicants respectfully submit that Claim 1, and all claims depending therefrom, patentably define over Mansell, and request the rejection of Claims 1, 2, 4, 5, 8, 9, 11-13, and 16, be withdrawn.

Regarding the rejection of Claims 3, 6, 7, 14, 15, and 27 as unpatentable over Mansell, Applicants respectfully traverse with the following response.

Claims 3, 14, 15, and 27 depend from Claim 1, and thus, patentably distinguish over any proper combination of cited references for at least the same reasons as those discussed above regarding Claim 1.

Regarding Claims 6 and 7, while the outstanding Office Action acknowledges that Mansell fails to disclose the features recited in Claims 6 and 7, the Office Action asserts that it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate these features.³ Other than a statement of obviousness, the outstanding Office Action provides no documentary evidence in support of the rejection of

³ Office Action at page 5, lines 5-13.

Claims 6 and 7. MPEP § 2144.03 specifically requires such evidence be provided.

Specifically, MPEP § 2144.03 states:

Any rejection based on assertions that a fact is well-known or is common knowledge in the art without documentary evidence to support the examiner's conclusion should be judiciously applied. Furthermore, as noted by the court in *Ahlert*, **any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner which might exist in the evidentiary showing made by the examiner to support a particular ground for rejection. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based.** See *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697; *Ahlert*, 424 F.2d at 1092, 165 USPQ 421 [emphasis added].

Thus, using "Official Notice" in place of actual evidence in something other than a very minor "fill in the gaps" capacity is improper. This was further emphasized in *In re Ahlert*, 165 USPQ 418, 421 (CCPA 1970):

Typically, it is found **necessary to take notice of facts** which may be used to supplement or clarify the teachings of a reference disclosure, perhaps to justify or explain a particular inference to be drawn from the reference teaching. The facts so noted serve to **'fill in the gaps'** which might exist in the evidentiary showing made by the Examiner to support a particular ground of rejection. **We know of no case in which facts judicially noted comprised the principle evidence upon which a rejection was based** were of such importance as to constitute a new ground of rejection when combined with the other evidence previously used. [Emphasis added.]

Therefore, "Official Notice," can only be applicable when being used to insubstantially fill in gaps, and not when being substituted for actual core features. In regard to Claim 6, even though the features recited therein may be useful semi-conductor materials as noted by the Office Action, semi-conductor materials vary widely and are not equivalent or interchangeable simply because they are useful. Thus, it follows that the makeup of the membrane and pads is a core feature which would not of been obvious to a person having

ordinary skill in the art at the time the invention was made simply because the membrane and pad materials are useful in the art.

Similarly, regarding Claim 7, Mansell's description of a doping process does not render the features of Claim 7 as obvious. Doping on **one** side of a substrate versus **both** sides of a substrate is clearly different. In this case, Mansell fails to disclose "the membrane and the pads being made in portions that are doped differently from each other" as recited in Claim 7. Instead, Mansell only describes a single layer (50) as being doped and etched and therefore the reflective surface and the pillars in Mansell **are not made** in portions that are doped differently from each other.⁴ Thus, "the membrane and the pads being made in portions that are doped differently from each other" as recited in Claim 7 is a core feature which would not of been obvious to a person having ordinary skill in the art at the time the invention was made.

Accordingly, it is submitted that the outstanding Office Action improperly rejected Claims 3, 6, 7, 14, 15, and 27 as unpatentable over Mansell. Thus, it is respectfully requested that the rejection of these claims be withdrawn.

Regarding the rejection of Claim 10 as unpatentable over Mansell in view of Costello, Applicants respectfully traverse with the following response. Mansell fails to set forth each and every element of amended independent Claim 1 and Costello fails to remedy the deficiencies of Mansell. Therefore, since Claim 10 depends from amended independent Claim 1, Claim 10 is patentably distinguished over Mansell in view of Costello for at least the reasons discussed above regarding Claim 1.

Claims 28-30 depend, directly or indirectly, from Claim 1 and patentably distinguish over the cited references for at least the reasons discussed above regarding Claim 1.

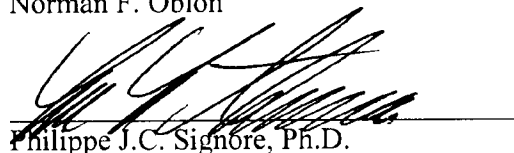
⁴ Mansell at col. 5, lines 1-13.

Newly added Claim 31 recites substantially similar features to those discussed above regarding Claim 1, and Claim 31 and the claims depending therefrom patentably distinguish over any proper combination of the cited references for at least the reasons discussed above regarding Claim 1.

Consequently, in light of the above discussion and in view of the present amendments, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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